

The Not So Illusory Truth Effect: Source Credibility Provides an Adaptively Rational Foundation for Repetition Effects

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Overview

The illusory truth effect – the finding that repeated statements are believed more¹ – is thought to be a deep cognitive bias leading to widespread belief in misinformation.² However, people generally adapt to environments that they encounter frequently.^{3,4} Rather than a deep bias, could the illusory truth effect be an adaptively rational heuristic? We present a formal model showing that when sources are credible, as is the case in the American media ecosystem,⁵ this pattern of belief is rational. We capture four key findings in the literature and predict a boundary condition: when sources are not credible. In two large (N=4,966; 2,484) experiments, the illusory truth effect is largely or fully moderated by source credibility highlighting its adaptively rational foundations.

An adaptively rational model

- Increasing belief in repeated statements is rational when the source i) is credible (likely to tell the truth) and ii) sometimes makes errors
- Prediction: the illusory truth effect is diminished or reversed for non-credible senders

$$P(\text{True} | \text{times seen} = n, \text{plausibility} = \gamma) \propto z \left(\frac{\alpha}{z\alpha + w} \right)^n \left(\frac{1}{z\alpha + w} \right)^{m-n} \gamma$$

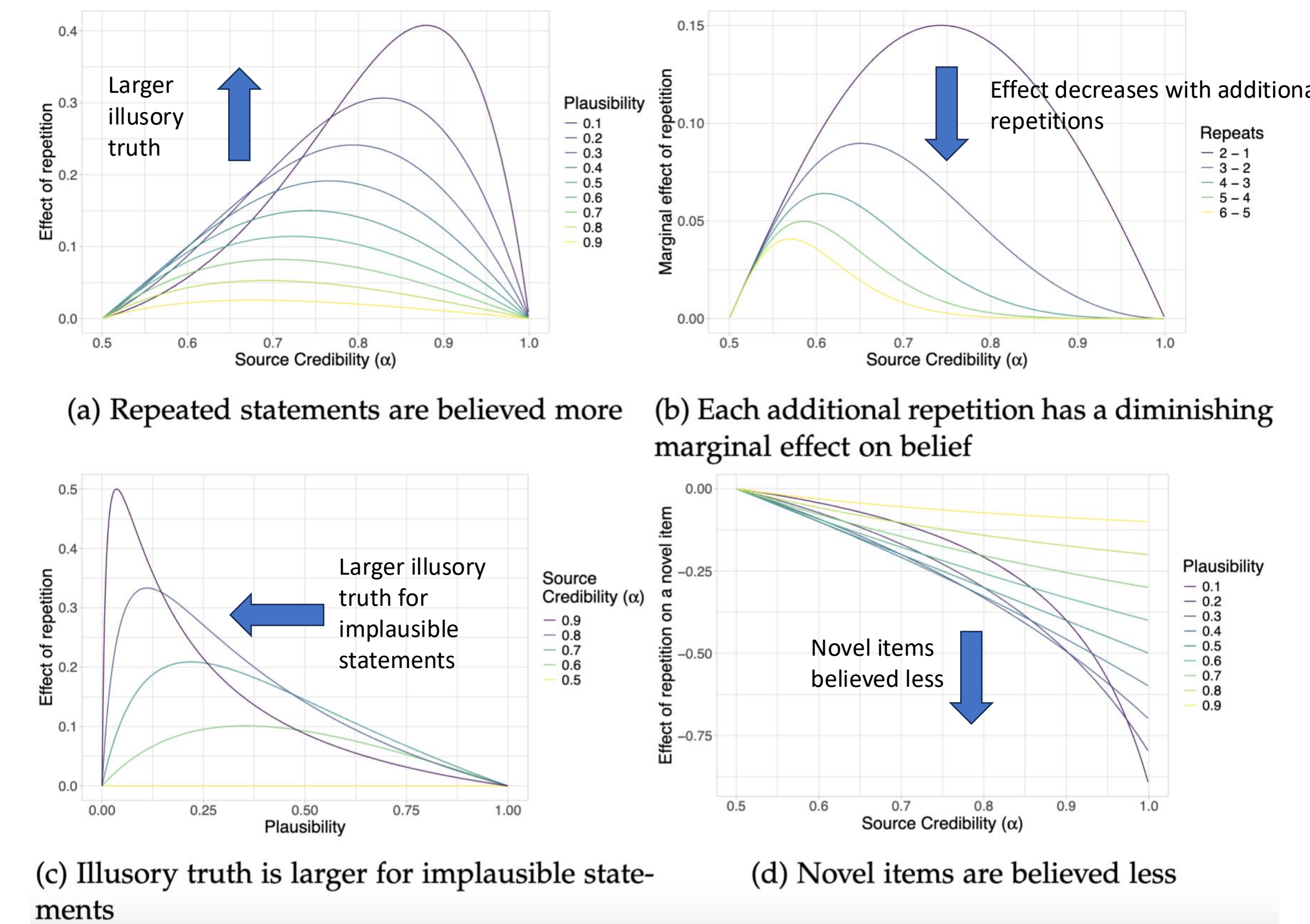
where z is the number of possible true statements, w is the number of possible false statements, α is the sender's credibility, and m is the total statements made

Experimental Design

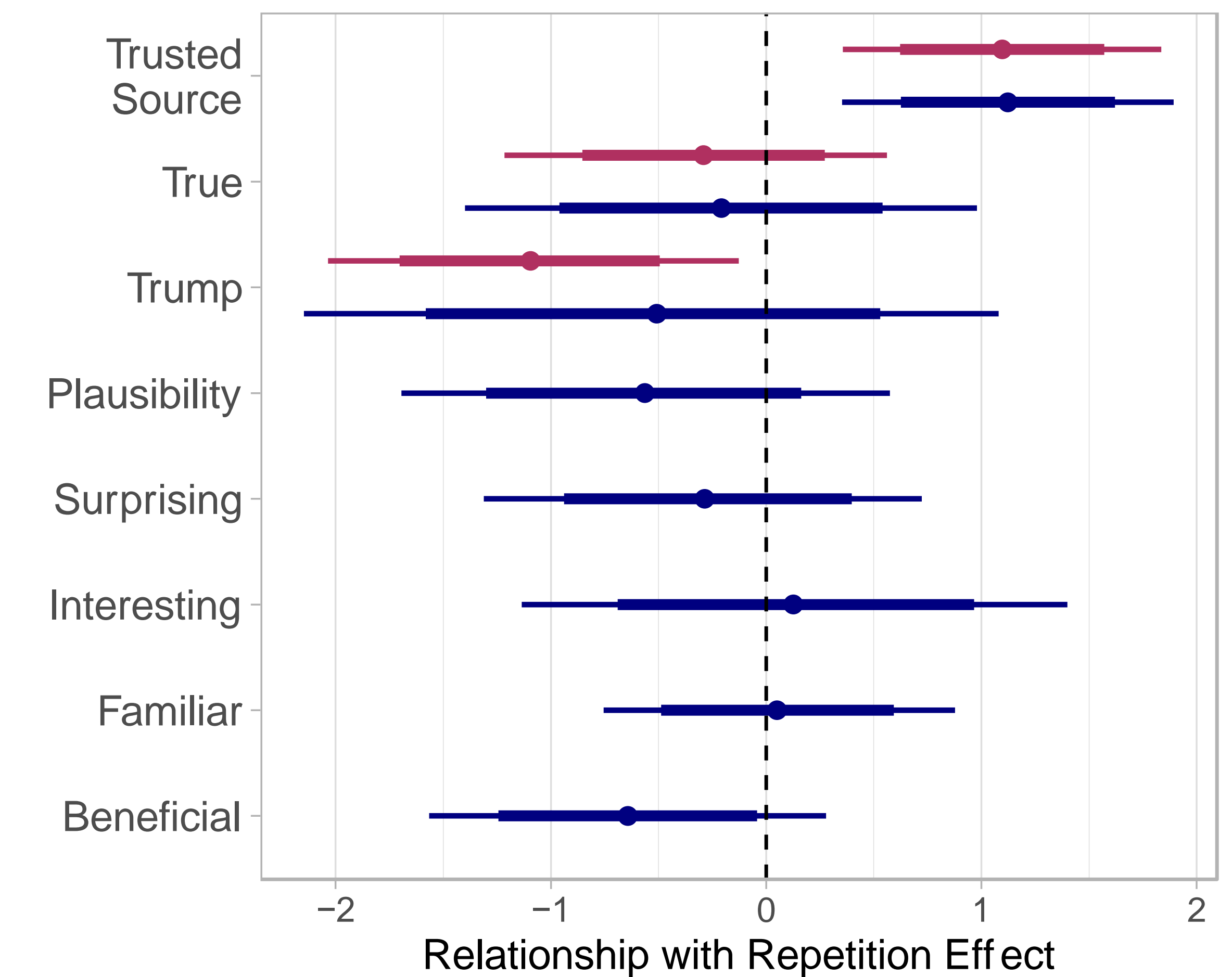
Study 1: Experimentally manipulating source credibility N=4966	
Randomized to exposure phase (16 news headlines) 3 rounds measuring liking, commenting, sharing intentions	
High-Quality 3 True, Repeated 3 False, Repeated 9 True, Novel 1 False, Novel	Low-Quality 3 True, Repeated 3 False, Repeated 1 True, Novel 9 False, Novel
Evaluation phase (18 headlines) Outcome: 100-point belief scale	
High-Quality 3 True, Repeated 3 False, Repeated 9 True, Novel 3 False, Novel	Low-Quality 3 True, Repeated 3 False, Repeated 3 True, Novel 9 False, Novel

Study 2: Real-world source credibility as a moderator N=2484
Moderator: "Do you trust Biden or Trump to tell the truth on important issues?"
Exposure phase (16 statements) 3 rounds measuring liking, commenting, sharing intentions
Statements are evenly split True/False, Trump/Biden, Repeated/Novel (i.e., 2 in each cell)
Evaluation phase (24 statements) Outcome: 100-point belief scale
Repeated statements: 8 evenly split True/False, Trump/Biden
Novel statements: 16 evenly split True/False, Trump/Biden

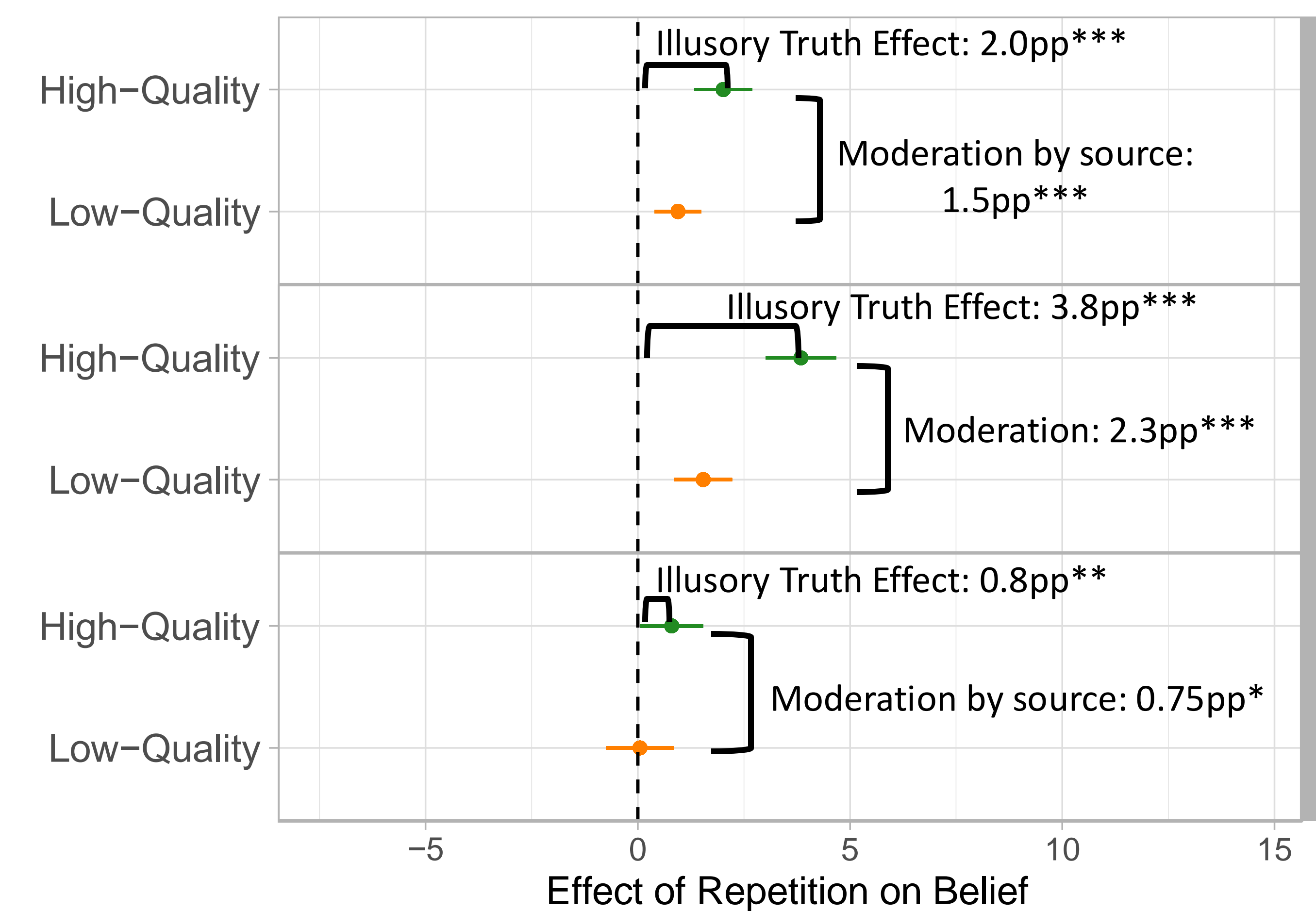
The model captures key findings in the literature



Study 2: credibility is best predictor of illusory truth



Study 1: source credibility moderates illusory truth



Takeaways and Limitations

- Rather than a deep cognitive limitation, the illusory truth effect appears to be an adaptive and normatively-grounded heuristic that is beneficial in many real-world environments
- People demonstrate a remarkable ability to employ adaptive heuristics efficiently while limiting their harms
- Suggests that cognition is not being hijacked by misinformation, at least in this manner
- Repetition in the lab may be meaningfully different, and work should move to the field to test when, where, and why heuristics are applied

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